

ABSTRACT

A system, method and device for MIMO radio communication of multiple signals between a first device having N plurality of antennas and a second device having M plurality of antennas. At the first device, a vector s representing L signals [$s_1 \dots s_L$] to be transmitted is processed with a transmit matrix A to maximize capacity of the channel between the first device and the second device subject to a power constraint that the power emitted by each of the N antennas is less than or equal to a maximum power. The power constraint for each antenna may be the same for all antennas or specific or different for each antenna. For example, the power constraint for each antenna may be equal to a total maximum power emitted by all of the N antennas combined divided by N. The transmit matrix A distributes the L signals [$s_1 \dots s_L$] among the N plurality of antennas for simultaneous transmission to the second device. At the second device, the signals received by the M plurality of antennas are processed with receive weights and the resulting signals are combined to recover the L signals.